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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Redevelopment of Spectrum to	)	
Encourage Innovation in the	)	ET Docket No. 92-9
Use of New Telecommunications	)	
Technologies	)	

Comments of Spatial Communications, Inc.

Spatial Communications, Incorporated ("SCI"), by its attorneys and pursuant to Section 1.415 of the Commission's Rules, hereby submits its comments with respect to the Notice of Proposed Rule Making ("NPRM") in the above-captioned proceeding.

SCI is a Delaware corporation formed to develop and commercialize a comprehensive array of personal communications service ("PCS") technologies that utilize Spatial-Division Multiple Access ("SDMA"), a "breakthrough" spectral management technology developed and patented by SCI's principals. Using smart antennas and proprietary signal processing technology, SDMA separates signals based on their spatial location, as well as their frequency content. As a result, SDMA has the ability to locate, track, spatially demultiplex and spatially multiplex signals to and from multiple users-- enabling simultaneous co-channel transactions within a single service area.[1/]

[1/] Moreover, SDMA is fully compatible with currently employed analog and digital signal modulation schemes, including Frequency [illegible]
(continued)

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Because of the technological gains inherent in the technology, implementing SDMA in the PCS environment will allow PCS systems to operate on a co-primary basis with other radio services without degradation to either PCS or incumbent users. SCI thus believes that implementing SDMA will mitigate the need to relocate fixed microwave users in the bands that the Commission proposes to reserve for emerging technologies. SCI's comments below focus on this issue.

In the NPRM, the Commission proposed to establish a spectrum reserve of 220 MHz in the 1.85-2.20 GHz band for emerging telecommunications technologies. A specific allotment is needed to encourage development of new and more effective radio technologies and services; for technical reasons, the 1.85-2.20 GHz band has been deemed the most suitable. To establish the proposed emerging technology band, the NPRM proposes relocating existing fixed microwave users in the 1.85-2.20 GHz band.

The costs associated with the notion of relocating incumbents are acknowledged in the NPRM:

[1/](...continued)
Division Multiple Access, Time-Division Multiple Access and Code-Division Multiple Access. SDMA technology is described in detail in Appendix A ("Implementing SDMA in the PCS Environment Technical and Economic Factors") to the Pioneers' Preference Request of Spatial Communications, Inc. See Pioneer Preference of Spatial Communications, Inc., PP-73, Gen. Docket 90-314 (filed May 4, 1992).

> We recognize that this proposed relocation will entail significant costs. ... The approach needed for this relocation contrasts sharply with the 'band clearing' approach used in the 1970s, when only two full service UHF television stations and a handful of TV translators had to be moved to new frequencies.[2/]

Nevertheless, the Commission may have underestimated just how controversial and disconcerting its proposal would prove to longstanding licensees in the 1.85-2.20 GHz band. Early commentators have outlined the financial and operational difficulties entailed by relocation and have expressed emphatic opposition thereto.[3/] Incumbents resisting displacement of their microwave operations are gaining Congressional support for protection of established users.[4/] Thus, it appears likely that if incumbent relocation is ordered by the Commission, protracted litigation-- involving the agency, newcomers and existing users-- may ensue.

In the NPRM, the Commission requested interested parties to present proposals that could diminish the impact of relocating existing users while ensuring timely availability of 2 GHz

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[2/] NPRM at 11 (para. 22).

[3/] See e.g., Comments of Public Service Company of Oklahoma (filed May 18, 1992); Comments of Williams Natural Gas Company (filed April 21, 1992); and Comments of City of Compton Municipal Water Department (filed January 31, 1992).

[4/] Senator Ernest Hollings has indicated that legislation may be introduced to block the emerging technologies proceeding. See Communications Daily, Vol. 12, No. 108, June 4, 1992.

frequencies for new services.[5/] SCI believes that implementing SDMA technology in PCS, as well as in other emerging technologies, will prove a robust solution to the problems of cost, disruption and opposition, that the mandatory relocation concept entails. As indicated above, and as demonstrated in SCI's Pioneer Preference Request (see text at note 1, supra) using SDMA technology in the proposed emerging technology band will generally allow incumbent and subsequent licensees to operate on a co-primary basis, thereby averting the conflict that has spawned the relocation controversy.

SDMA increases spectral efficiency by using multiple transmit antennas which selectively direct energy toward intended receivers without interfering with other users. Multiple users are allowed to occupy the same frequency at the same time because SDMA separates the messages taking advantage of their different spatial channels. As applied to PCS, SDMA will allow fixed microwave users to co-exist in most cases with new PCS providers on a co-primary basis, making it unnecessary for the incumbents to vacate their present allocation, incur substantial relocation costs or modify existing operations in any way. SCI believes that SDMA can be utilized with services other than PCS allowing for simultaneous incumbent microwave and new service operations in the 1.85-2.20 GHz band for an extended period of time.

[5/] NPRM at 13 (para. 27).

For all of the foregoing reasons, Spatial Communications, Inc. respectfully requests that the Commission consider the application of SDMA technology to operations in the 1.85-2.20 GHz band in conjunction with its actions in ET Docket 92-9.

Respectfully submitted,

SPATIAL COMMUNICATIONS, INC.

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June 8, 1992

CERTIFICATE OF SERVICE

I, Ruth E. McGovern, a secretary in the law offices of Gurman, Kurtis, Blask & Freedman, Chartered, do hereby certify that on this 8th day of June, 1992, a copy of the foregoing "Comments of Spatial Communications, Inc." was hand-delivered to:

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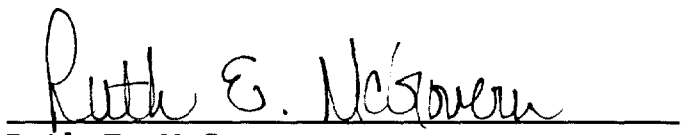

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